

REMARKS

The above-identified patent application has been amended and reconsideration and reexamination are requested. Claims 1-28 are pending. Claims 26-28 are withdrawn from consideration. Claims 1-25 are rejected by the Examiner.

The Examiner rejected claims 13 and 25 under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such as way as to enable one skilled in the art to which it pertains, or with which it is mostly nearly connected, to make and/or use the invention. Specifically, the Examiner stated that claims 13 and 25 include the limitation "code ordering" which is described in the specification, page 6, lines 16-17, to mean that logical constructs are sorted based on producer/consumer. The Examiner interpreted this definition as being non-enabling because the phrase "producer/consumer" does not fully describe what "code ordering" is.

The Examiner also rejected claims 13 and 25 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner stated that in claims 13 and 25, the term "code ordering" is unclear because as disclosed in the specification on page 6, lines 16-17, the phrase "producer/consumer" does not fully describe what "code ordering" is.

The applicants have amended the specification in the paragraph starting on page 6, line 16 to clarify the phrase "producer/consumer" so that "code ordering" is clarified. No new matter was added. As is known to one skilled in this art, a logical construct representing an element that "produces" or outputs a signal is ordered before an element that "consumes" or receives the signal as an input. Accordingly, claims 13 and 25 are proper under 35 U.S.C. 112, first and second paragraphs.

The Examiner rejected claims 1-2, 5-10, 14, and 18-22 under 35 U.S.C. 103(a) as being unpatentable over Mandell (US Patent 6,477,689) in view of Reynolds (US Patent 6,480,985). Specifically, the Examiner indicated that Mandell discloses part of the claimed invention but

does not specifically “disclose C++ code or the model including state elements and graphical library elements of the logic circuit”. The Examiner looked to Reynolds as disclosing “C++ code and a model including state elements and graphical library elements (graphical representations which are stored in a file or library format) of the logic circuit” [abstract, col. 7, lines 14-17, and col. 8, lines 44-49; and col. 12, lines 35-42]. The Examiner then concluded that “it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Mandell and Reynolds because Reynolds’ use of C++ code would have improved Mandell’s system by providing a more object-oriented model which would be useful for providing graphical representations of the circuit for ease of use by a user”. Furthermore the Examiner stated that “it would have been obvious to one of ordinary skill in the art at the time the invention was made to include Reynolds’ state elements and graphical library elements because having Reynolds’ state elements would have provided a way of state transitions for circuit simulation or verification and the graphical elements would have provided for an easier design system for a user by providing visual and interactive design through a user interface [see Reynolds col.’s 7 and 8]”.

Applicants have amended claim 1. Applicants’ claim 1, as amended, calls for “. . . selecting and placing graphical library elements of the logic circuit using a graphical user interface”. Neither Mandell nor Reynolds teaches or suggests “selecting and placing graphical library elements of the logic circuit using a graphical user interface”. Mandell teaches “Upon receiving a new command at step 24 (from a source such as a user keyboard or script driver input), the predefined computer-based command is interpreted at step 28” (col 3, lines 58-60) and “An example modification might be a request to replace a digital filter with a delay chain and multipliers.” (col 3, lines 62-64). Reynolds teaches “the use of computer system 100 to provide graphical representation of an IC design based on its high-level IC description language code.” (col 3, lines 19-22). Assuming, arguendo, that there is a suggestion to combine these references, applicants submit that combining the graphical library elements from Reynolds with the circuit design tool would not result in “selecting and placing graphical library elements of the logic circuit using a graphical user interface”. Such a graphical user interface involves more than representing the IC design, it involves providing a capability to a user to manipulate the

graphical library elements. Accordingly, claim 1 is not rendered obvious by Mandell in view of Reynolds.

Claim 1 is patentable over Mandell in view of Reynolds. Applicants' claims 2 and 5-8 are dependent upon, and further limit, claim 1. Accordingly, claims 2 and 5-8 are patentable over Mandell in view of Reynolds.

Applicants' claim 9, as amended, calls for "... specifying a model containing combinatorial blocks, state elements and graphical library elements using a graphical user interface. . .". Applicants submit that claim 9, as amended, is patentable over Mandell in view of Reynolds for at least the same reasons set out above with respect to Claim 1.

Applicants' claim 14, as amended, calls to "specify a model containing combinatorial blocks, state elements and graphical library elements using a graphical user interface". Applicants submit that claim 14, as amended, is patentable over Mandell in view of Reynolds for at least the same reasons set out above with respect to Claim 1.

Applicants' claim 18, as amended, calls to "specify a model containing combinatorial blocks, state elements and graphical library elements using a graphical user interface". Applicants submit that claim 18, as amended, is patentable over Mandell in view of Reynolds for at least the same reasons set out above with respect to Claim 1.

Claim 18 is patentable over Mandell in view of Reynolds. Claims 19-21 are dependent upon, and further limit, claim 18. Accordingly, claims 19-21 are patentable over Mandell in view of Reynolds.

Applicants' claim 22 calls for "a graphic user interface (GUI) for receiving parameters from a user to generate a model and displaying the model, the model containing combinatorial blocks, state elements and graphical library elements". Applicants submit that claim 22 is

patentable over Mandell in view of Reynolds for at least the same reasons set out above with respect to Claim 1.

The Examiner rejected claim 3-4 under 35 U.S.C. 103(a) as being unpatentable over Mandell in view of Reynolds, and further in view of Liao (US Patent 6,152,612).

Claim 1 is patentable over Mandell in view of Reynolds and further in view of Liao. Claims 3-4 are dependent upon, and further limit, claim 1. Therefore, claims 3-4 are patentable over Mandell in view of Reynolds and further in view of Liao.

The Examiner rejected claims 11-12 and 23-24 under 35 U.S.C 103(a) as being unpatentable over Mandell in view of Reynolds, as applied to claims 9 and 22 above, and further in view of Anderson (US Patent 6,519,755).

Claim 9 is patentable over Mandell in view of Reynolds and further in view of Anderson. Claims 11-12 are dependent upon, and further limit, claim 9. Accordingly, claims 11-12 are patentable over Mandell in view of Reynolds and further in view of Anderson.

Claim 22 is patentable over Mandell in view of Reynolds and further in view of Anderson. Claims 23-24 are dependent upon, and further limit, claim 22. Accordingly, claims 23-24 are patentable over Mandell in view of Reynolds and further in view of Anderson.

The Examiner rejected claims 13 and 25 under 35 U.S.C. 103(a) as being unpatentable over Mandell in view of Reynolds, as applied to claims 9 and 22 above, and further in view of Seawright (US Patent Application 2002/0023256).

Claim 9 is patentable over Mandell in view of Reynolds and further in view of Seawright. Claim 13 is dependent upon, and further limits, claim 9. Accordingly, claim 13 is patentable over Mandell in view of Reynolds and further in view of Seawright.

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Claim 22 is patentable over Mandell in view of Reynolds and further in view of Seawright. Claim 25 is dependent upon, and further limits, claim 22. Accordingly, claim 25 is patentable over Mandell in view of Reynolds and further in view of Seawright.